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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/732,759	12/10/2003	Zbigniew Kubala	109	6552

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PAUL L. BROWN  
EMRICH & DITHMAR, LLC  
125 SOUTH WACKER DRIVE, SUITE 2080  
CHICAGO, IL 60606-4401

EXAMINER

HEWITT, JAMES M

ART UNIT	PAPER NUMBER
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3679

DATE MAILED: 07/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/732,759	<b>Applicant(s)</b> KUBALA, ZBIGNIEW	
	<b>Examiner</b> James M. Hewitt	<b>Art Unit</b> 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 1/23/06 & 4/27/06.  
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2,4-7 and 9-19 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☒ Claim(s) 1 is/are allowed.  
6) ☒ Claim(s) 6,7 and 9-19 is/are rejected.  
7) ☒ Claim(s) 2,4 and 5 is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4/27/06</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement filed 4/27/06 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, but each patent listed that is not in the English language has not been considered.

### ***Drawings***

The drawings are objected to because the cross-hatching for each of the components (i.e. seals, back-up ring) does not correspond to the accepted cross-hatching for the associated materials of the components as outlined in MPEP 608.02. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency.

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Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

Claims 2, 5 and 11-19 are objected to because of the following informalities:

In claim 2, line 3, "chamfered" should be inserted before "portion".

In claim 5, lines 1-2, "said chamfered sealing surface" lacks proper antecedent basis.

In claim 5, lines 2-3, "said other sealing surface" lacks proper antecedent basis.

In claim 11, line 5, "therebetween" should be inserted after "volume".

In claim 11, lines 5-7, it is unclear as to what the phrase "the relative displacement of said seal assembly...in the unpressurized position" modifies. Should "to provide" also precede "the relative displacement"?

In claim 13, line 15, "the seal faces" lacks proper antecedent basis.

In claim 16, line 3, "the gap" lacks proper antecedent basis.

In claim 16, line 3, "the inner wall" lacks proper antecedent basis.

In claim 17, line 4, "the gap" lacks proper antecedent basis.

In claim 17, line 5, "the inner wall" lacks proper antecedent basis.

In claim 17, line 7, "to provide" should be inserted before "the relative displacement".

In claim 17, line 7, "the floating seal assembly" lacks proper antecedent basis.

In claim 17, line 8, "the separation" lacks proper antecedent basis.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

Claims 6-7 and 9-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 6, lines 15-16, the recitation "to reduce the operating temperature of the coolant union during operation" constitutes new matter that is not supported by the original disclosure.

In claim 13, lines 14-15, the recitation "to reduce the temperature therebetween during operation" constitutes new matter that is not supported by the original disclosure.

In claim 14, reciting that the lubricating medium (contained within the porous material structure) is the fluid coolant constitutes new matter that is not supported by the original disclosure.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubala (US 5,617,879) in view of Deubler (US 2,723,136).

Kubala disclose a coolant union (10) having a tubular carrier member (40) axially movable within a union housing (16) having an inner wall defining a cylindrical inner chamber, with the carrier member adapted to receive fluid coolant and structurally arranged to direct the coolant through the union to an associated tubular rotor (18), with the coolant union having a seal assembly including in combination: a first seal member (36) presenting an annular sealing surface mounted to and rotatable with said rotor; a non-rotating second seal member (38) presenting an annular sealing surface mounted to the tubular carrier member for axial movement within the housing between an unpressurized position wherein said second seal member is spaced apart from said first seal member and a pressurized position wherein said first and said second seal members are structurally arranged to provide a seal between the annular sealing surfaces of said rotating and said non-rotating seal members. Kubala fails to teach at least one of the annular sealing surfaces presented by said rotating seal member and said non-rotating seal member is chamfered such that the width of one of said annular

sealing surfaces is less than the width of said other annular sealing surface to provide a narrowed contact area therebetween to reduce the operating temperature of the coolant union during operation. Deubler teaches a rotary union similar to that of Kubala having a seal member that is chamfered such that the width of one of the annular sealing surfaces is less than the width of the other annular sealing surface to provide a narrowed contact area therebetween. In view of Deubler's teaching, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Kubala's rotating seal member with a chamfered surface in order to narrow the contact area between the seal members.

With respect to claim 7, wherein the width of said chamfered sealing surface provides a sealing surface of approximately one-half the width of said other sealing surface.

With respect to claim 10, wherein said coolant union further includes a secondary seal assembly (89/90) for preventing coolant leakage forwardly through the gap between the carrier member and the inner wall of the union housing.

Claims 13, 15, 16 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kubala (US 5,617,879) in view of Schoenmeyr (US 4,281,839).

Kubala discloses a coolant union (10) having a tubular carrier member (40) axially movable within a union housing (16) having a wall defining a cylindrical inner chamber, with the carrier member adapted to receive fluid coolant and structurally arranged to direct the coolant through the union to an associated tubular rotor (18), with

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the coolant union having a seal assembly including in combination: a first seal member (36) presenting an annular sealing surface mounted to and rotatable with said rotor; a non-rotating second seal member (38) presenting an annular sealing surface mounted to the tubular carrier member for axial movement within the housing between an unpressurized condition wherein said second seal member is spaced apart from said first seal member and a pressurized condition wherein said first and said second seal members are structurally arranged to provide a seal between the annular sealing surfaces of said rotating and said non-rotating seal members. Kubala fails to teach that at least one of the annular sealing surfaces presented by said rotating seal member and said non-rotating seal member contains a lubricating medium to provide self-lubrication of the seal faces to reduce the temperature therebetween during operation. Kubala's sealing members are made of silicon carbide. Schoenmeyr teaches a rotary face sealing apparatus comprising silicon carbide seals having graphite particles embedded in their surfaces to impart self-lubricating properties to the seal and allow it to run dry. In view of Schoenmeyr's teaching, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify at least one of Kubala's seals to have graphite particles embedded in their surfaces to impart self-lubricating properties to the seals.

With respect to claim 15, wherein each of said first and said second seal members have different porosity values for absorbing the fluid coolant to provide self-lubrication and resistance to dry running conditions of the coolant union.



With respect to claim 16, wherein said coolant union further includes a secondary seal assembly (89/90) for preventing coolant leakage forwardly through the gap between the carrier member and the inner wall of the union housing.

With respect to claim 19, wherein said porous material structure is a silicon carbide based material.

### ***Allowable Subject Matter***

Claim 1 is allowed.

Claims 2, 4 and 5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Note that the allowability of claims 2 and 5 is also contingent upon overcoming the above-noted objections to claims 2 and 5. See ***Claim Objections*** above.

### ***Response to Arguments***

Applicant's arguments, see pages 3-4, filed 1/23/06, with respect to the 35 USC 103 rejection of claim 1 have been fully considered and are persuasive. This rejection has been withdrawn.

Applicant's arguments with respect to claims 6-7, 10-12 and 13-19 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

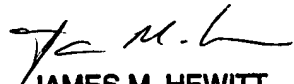
Any inquiry concerning this communication or earlier communications from the examiner should be directed to James M. Hewitt whose telephone number is 571-272-7084.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Stodola can be reached on 571-272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMH  
7/24/06

  
**JAMES M. HEWITT**  
**PRIMARY EXAMINER**